Micro Commercial Components
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MMBT3906T

PNP General Purpose Transistor

Features

- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Surface Mount SOT-523 Package
- Epitaxial Planar Die Construction
- Epoxy meets UL 94 V-0 flammability rating
- Moisure Sensitivity Level 1
- Marking:3N
- Halogen free available upon request by adding suffix "-HF"

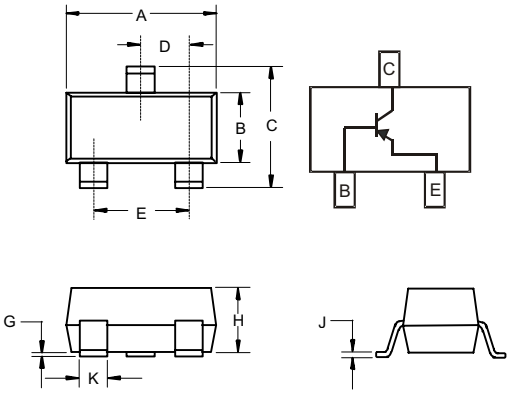
Maximum Ratings

Symbol	Rating	Rating	Unit
V_{CEO}	Collector-Emitter Voltage	-40	V
V_{CBO}	Collector-Base Voltage	-40	V
V_{EBO}	Emitter-Base Voltage	-5.0	V
I_C	Collector Current	-200	mA
$R_{\theta JA}$	Typical Thermal Resistance Junction to Ambient	833	℃/W
P_D	Power Dissipation	150	mW
T_J	Junction Temperature	-55 to +150	℃
T_{STG}	Storage Temperature	-55 to +150	℃

Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter	Min	Max	Units
OFF CHARACTERISTICS				
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage (I_C=-1.0mAdc, I_B=0)	-40		Vdc
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage (I_C=-10μAdc, I_E=0)	-40		Vdc
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage (I_E=-10μAdc, I_C=0)	-5.0		Vdc
I_{CBO}	Collector Cut-off Current (V_{CB}=-30Vdc, I_E=0)		-50	nAdc
I_{EBO}	Emitter Cut-off Current (V_{EB}=-5Vdc, I_C=0)		-50	nAdc
ON CHARACTERISTICS				
h_{FE}	DC Current Gain* (I_C=-0.1mAdc, V_{CE}=-1.0Vdc) (I_C=-1.0mAdc, V_{CE}=-1.0Vdc) (I_C=-10mAdc, V_{CE}=-1.0Vdc) (I_C=-50mAdc, V_{CE}=-1.0Vdc) (I_C=-100mAdc, V_{CE}=-1.0Vdc)	 60 80 100 60 30	 300 	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage (I_C=-10mAdc, I_B=-1.0mAdc) (I_C=-50mAdc, I_B=-5.0mAdc)		 -0.25 -0.4	Vdc
$V_{BE(sat)}$	Base-Emitter Saturation Voltage (I_C=-10mAdc, I_B=-1.0mAdc) (I_C=-50mAdc, I_B=-5.0mAdc)	 -0.65	 -0.85 -0.95	Vdc

SOT-523



DIMENSIONS					
	INCHES		MM		
DIM	MIN	MAX	MIN	MAX	NOTE
A	.059	.067	1.50	1.70	
B	.030	.033	0.75	0.85	
C	.057	.069	1.45	1.75	
D	.020 Nominal		0.50Nominal		
E	.035	.043	0.90	1.10	
G	.000	.004	.000	.100	
H	.028	.031	.70	0.80	
J	.004	.008	.100	.200	
K	.010	.014	.25	.35	

SMALL-SIGNAL CHARACTERISTICS

Symbol	Parameter	Min	Max	Units
f_T	Current Gain-Bandwidth Product (I_C=-10mAdc, V_{CE}=-20Vdc, f=100MHz)	250		MHz
C_{obo}	Output Capacitance (V_{CB}=-5.0Vdec, I_E=0, f=1MHz)		4.5	pF
C_{ibo}	Input Capacitance (V_{BE}=-0.5Vdc, I_C=0, f=1kHz)		10.0	pF
NF	Noise Figure (I_C=-100μAdc, V_{CE}=-5.0Vdc, R_S=1.0kΩ, f=1KHz)		4.0	dB

SWITCHING CHARACTERISTICS

t_d	Delay Time	(V_{CC}=-3.0Vdc, V_{BE}=-0.5Vdc, I_C=-10mAdc, I_{B1}=-1.0mAdc)	35	ns
t_r	Rise Time		35	ns
t_s	Storage Time	(V_{CC}=-3.0Vdc, I_C=-10mAdc, I_{B1}=I_{B2}=-1.0mAdc)	225	ns
t_f	Fall Time		75	ns

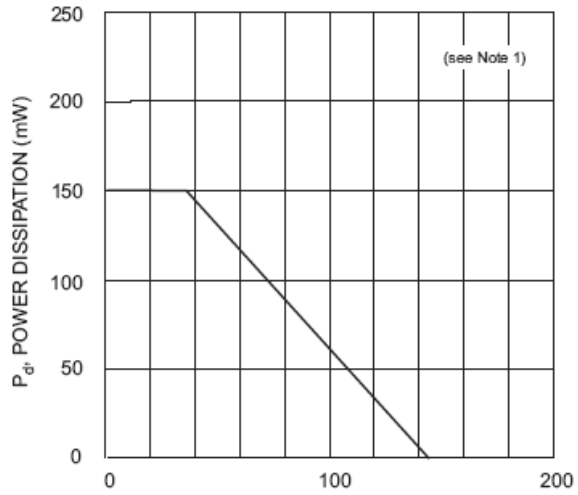


Fig. 1, Power Derating Curve

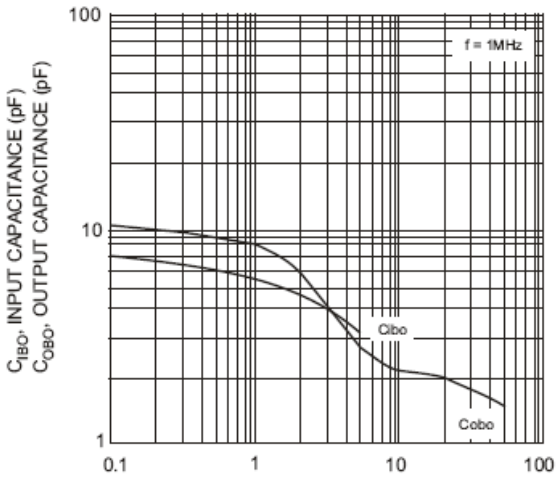


Fig. 2, Input and Output Capacitance vs. Collector-Base Voltage

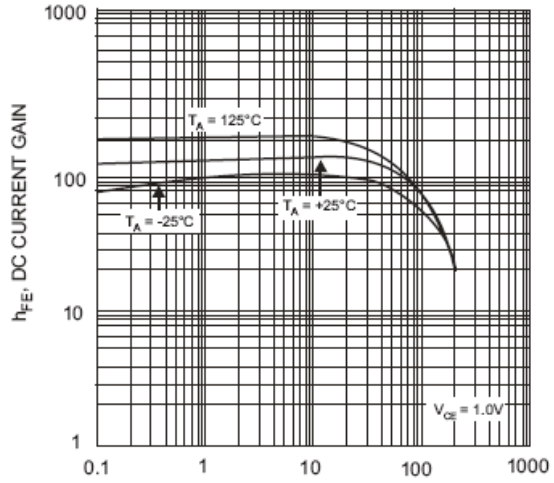


Fig. 3, Typical DC Current Gain vs Collector Current

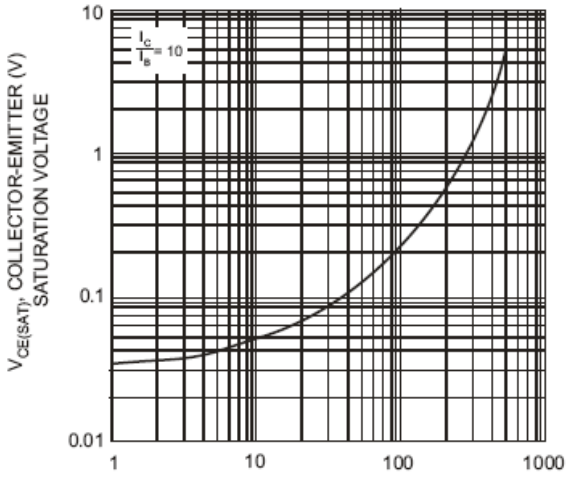


Fig. 4, Typical Collector-Emitter Saturation Voltage vs. Collector Current

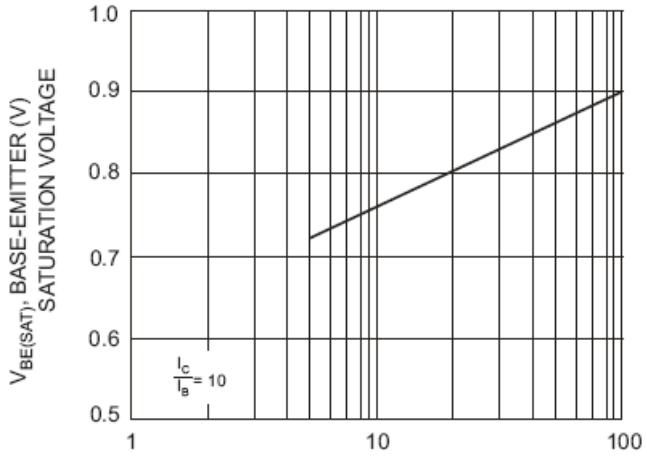


Fig. 5, Typical Base-Emitter Saturation Voltage vs. Collector Current

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Ordering Information :

Device	Packing
Part Number-TP	Tape&Reel;3Kpcs/Reel

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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